

Remarks

Note: The Advisory Action mailed October 18, 2006 did not state whether the Amendment After Final of 6 October 2006, which only canceled claims 1, 2 and 17, had or had not been entered. In either event, the present amendment maintains the cancellation of claims 1, 2 and 17, and in addition, cancels claims 11, 14, 22 and 23. Dependent claims 3, 12, 13, 15 and 24 are being rewritten in independent form. No other amendments are being made, so no new issues are being raised. Applicant submits that this amendment places the application in condition for allowance because their rejections cite no references that suggest elements of those dependent claims.

* * *

Of the claims pending after this amendment, claims 12-13 and 24 remain rejected under 35 U.S.C. §103(a) as unpatentable over Pu et al. U.S. Patent No. 6,825,618 in view of Brcka U.S. Patent Publication No. 2001/0022158; claim 15 remains rejected over these two references in further view of Davis et al. U.S. Patent No. 6,685,799; and Claims 3, 4 and 6 remain rejected over these three references in further view of Todorov et al. U.S. Patent Publication No. 2003/0006009. Claims 5, 7-10 and 16 relate to non-elected species that are dependent on claims that applicant submits are allowable for the following reasons:

- Claims 13 and 24 call for “*high-efficiency sections*” of the antenna ... *formed of small cross-section conductors* close to the dielectric chamber wall and the *low-efficiency sections* of the antenna ... *formed of relatively large cross-section conductors*.
- Claim 12 calls for “*high-efficiency sections* of the antenna [that] provide *concentrated antenna current paths* close to the dielectric chamber wall and the *low-efficiency sections* [that] provide *distributed antenna current paths*.”
- Claim 15 calls for a shield having “alternating high and low-transparency sections” respectively included in “the high-radiation segments ... and the low-radiation segments of the peripheral ionization source”, with “the *high-efficiency sections of the antenna being aligned with the high-transparency sections of the shield* and the low-

efficiency sections of the antenna being aligned with the low-transparency sections of the shield.”

- Claim 3 calls for “*high-transparency sections of the shield [having] a plurality of slots therethrough and low-transparency sections of the shield [that] are electrically conductive and generally solid relative to the high-transparency sections.*”

The patentability of claims 13 and 24 over the cited references should be easy to see. Figs. 2, 3-3E, 4-4F and 5-5B show examples of conductors of the different cross sections recited in these claims. Nowhere in the references is this combination of conductor cross sections suggested for high and low efficiency antenna sections for an ICP source. Claims 13 and 24 should be allowed.

Claim 12 should be deemed patentable based on the recitations of concentrated and distributed paths that the antenna in the source covered by claims 13 and 24 provides, where small cross-sections of the conductor concentrate currents while large cross-sections provide for a more distributed current, producing respectively stronger and weaker fields. This is also true of the respectively more closely and more widely spaced conductors of the non-elected species of Figs. 6A, D and G, and Figs. 7A-7C. There is nothing in the references on which to base a rejection of these claims.

Claims 15 and 3 focus on the shields of the ICP source. Claim 15 calls for a source with high radiation segments made up of high efficiency antenna sections aligned with high transparency shield sections, and low efficiency antenna sections aligned with low transparency shield sections. This is absent from the references. Claim 3 specifies that the high transparency shield sections have a plurality of slots, while the low transparency shield sections are generally solid. The regularly slotted shield of Todorov et al. provides uniform transparency. It is technically incorrect to consider each slot of a Faraday shield to be a high transparency section and each intervening metal strip to be a low transparency section. A Todorov et al. shield would provide uniform transparency. Todorov et al. state that they seek “spacial uniformity” [col. 2, lines 19-26]. In contrast, applicant intends to

Application No. 10/717,268
Amendment dated October 27, 2006
Reply to Office Action of October 18, 2006

first produce a plasma of alternating high and low plasma density, which is nowhere taught by Todorov et al. or any of the other references.

* * *

It is submitted that the dependent features, now written in independent form, should be separately considered, rather than summarily rejecting all claims based on the features in the broadest claims. Accordingly, such separate reconsideration is respectfully requested.

* * * * *

For the reasons stated above, it is submitted that the claims are allowable. An early allowance is respectfully requested.

If any charges or credits are necessary to complete this communication, please apply them to Deposit Account 23-3000.

Respectfully submitted,

WOOD, HERRON & EVANS, L.L.P.

BY /Joseph R. Jordan/
Joseph R. Jordan, Reg. No. 25,686

2700 Carew Tower
Cincinnati, OH 45202
(513) 241-2324
(513) 241-6234 (Facsimile)